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(58) Field of Search

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**& WPI**

(54) Abstract Title

**Cosmetic composition comprising gellan gum and carrageenan**

(57) A method of manufacturing a cosmetic composition comprises use of gellan gum and carrageenan. "Cosmetic" is widely defined to include personal care and hygiene, for the skin, hair and mouth. There are mentioned: use of a structuring agent to reduce or eliminate brittleness, e.g. chosen from polyhydric alcohols, glycerin, sorbitol and glycolic compounds; use of a sequestering agent; pH control; elevated temperature processing; intermediates; bases; a clear gel; a clear gel containing suspended bubbles of oil; an emulsion; a cosmetic composition which, when applied to the body, can produce an artificial skin thereon.

**GB 2 384 705 A**

TITLE                      Cosmetic and Related Compositions

FIELD OF THE INVENTION

This invention relates to cosmetic compositions, bases for use in making these, and methods of making the same, more particularly involving use of a gel. The term  
5 "gel" used herein, unless otherwise stated, refers to cosmetic industry terminology, which is slightly different from food industry terminology, e.g. in that cosmetic gels are slightly flowable.

BACKGROUND

A number of cosmetics are required in gel form. Previous gel cosmetics have  
10 been synthetic, using carbomer gums, but there is a demand for natural cosmetics which would extend to natural gel cosmetics. To date, there has not been any successful natural gel cosmetic because the formulations tried have not had the right structure to be cosmetically acceptable. They are too brittle or sticky or slippery, or do not absorb well into the skin or hair. The required properties are well-known and  
15 have been readily obtained with synthetic gels. After extensive research, the inventor has discovered a natural gel composition which is able to be made cosmetically acceptable.

THE INVENTION

The inventor perceives that gel form cosmetics made from natural ingredients  
20 rather than synthetic ones would be preferable. He also considers that substances used in the food industry have usually undergone much more rigorous testing than substances used in the cosmetics industry. Thus, suitable substances are more natural and safer when taken from the field of food technology than the often synthetic chemicals used in the cosmetics industry; and they are much more suitable to the

human body. This is more particularly the case with natural products that have an organic origin, i.e. a natural plant origin in which the use of pesticides can be obviated. This also tends towards an environmentally friendly product. The inventor has looked particularly at that class of cosmetics which involve use of a gel, and  
5 related products.

According to one aspect of the invention, there is provided a method of manufacturing a cosmetic composition, characterised in that it comprises use of gellan gum and carrageenan. Both gellan gum and carrageenan are polysaccharides. Gellan gum is produced on a commercial scale by the microbiological fermentation action of  
10 the micro-organism sphingomonas elodea. It is available from The NeutraSweet Kelco Company, a division of the Monsanto Company, under their trade name KELCOGEL, and the low acyl form is used in the examples described below, as is usual in the food technology art. Carrageenan is obtained from seaweed, and the carrageenan used in the examples described below is kappa-carrageenan, as is usual in the food technology  
15 art; this can be obtained from Honeywell & Stein Limited of Times House, Throwley Way, Sutton SM1 4AF, UK under their trade name GELCARIN. The use of either gellan gum or carrageenan without the other tends to give syneresis, a breaking up of the gel structure so that water comes out of the structure, e.g. together with active ingredients dissolved in the water.

20 The inventor investigated a huge number of different substances and combinations of substances in trying to produce a cosmetic composition using ingredients from natural sources with properties similar to those obtainable for gel cosmetic compositions made from carbomers. He was aware that various combinations of gellan gum and carrageenan were too brittle, and therefore unable to serve as cosmetic

compositions, but thought of trying to modify such combinations for the purpose. Therefore, in embodiments of the invention, the processing (e.g. the proportions of these two components and/or the use of additions) must be chosen with a view to providing a suitably low or zero brittleness in order to be usable as a cosmetic composition.

Other gums than gellan gum, e.g. xanthan, locust bean or tragacanth, have been found not suitable because they produce a cloudy product and/or a wrong feel on the skin. For the same reasons, attempts to replace the carrageenan by an alginate or other seaweed gel have not been found anything like as successful as the carrageenan.

10 The term "cosmetic" as used herein is not to be understood in any narrow sense but includes use in relation to personal care and hygiene, all for external application to the body (including inside the mouth, e.g. dentifrices), for example: in relation to cleaning, polishing, scouring and abrasive preparations, soaps, perfumery, essential oils, aromatherapy oils, cosmetics, hair lotions, dentifrices, deodorants, anti-perspirants, 15 soothing, sun tan and after sun preparations, toilet preparations, and preparations for the care of the body, skin, nails, hair and mouth, and for use in the bath. It is to be noted that the invention can be applied to medicated preparations, and indeed may be used (e.g. as a base) in non-cosmetic medical applications because of its cosmetically acceptable properties, e.g. its feel when applied to the skin. Examples described 20 below can be made entirely from edible ingredients.

According to another aspect of the invention, there is provided a cosmetic composition characterised in that it comprises gellan gum and carrageenan.

Embodiments of the invention may comprise any one or more of the following features, whether as method or product. The w/w ratio of gellan gum to carrageenan

is substantially in the range of 1:1 up to 1:8, preferably substantially in the range of 1:2 up to 1:6, more preferably substantially in the range of 1:2 up to 1:3. The gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product, preferably 0.1 to 0.2%. The carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product, preferably 0.2 to 0.5%. The method comprises use of a structuring agent to reduce or eliminate brittleness. The method comprises use of a structuring agent to produce a gel structure suitable for cosmetic purposes. Such structure may provide reduced increased water-holding. Apart from its cosmetic suitability when applied to the body (on the skin or hair), the reduced or zero brittleness feature makes for easy pumping from a dispenser by the consumer in order to apply it. The structuring agent comprises one or more substances chosen from the group comprising polyhydric alcohols and glycerin, or from the group comprising sorbitol, glycerin and glycolic compounds. Such substances can be used to replace water to make the product less brittle; where one cannot use oils. The method comprises use of a sequestering agent. Preferably, there are used water and means to remove calcium ions from the water. The method comprises use of means to produce a pH value within a predetermined range, preferably from 3.5 to 7.5, possibly use of a neutralising means. During manufacture, in order to avoid the product setting, it is maintained at a temperature above 40 degrees Centigrade prior to a filling stage. Filling (e.g. of consumer-usable containers) with the product is carried out within a temperature range of from 25 degrees Centigrade to 45 degrees Centigrade. The method may be used to produce a cosmetic composition intermediate product which is not a gel but can be used to produce a cosmetic composition which is a gel. The method may be used to produce a cosmetic composition which is a base to which can

be added active ingredients and can be used to produce a cosmetic composition which is a gel. The method may comprise the further stage of actually being used to produce a cosmetic composition which is a gel. This may be clear gel, a clear gel containing suspended bubbles of oil, an emulsion, and/or a cosmetic composition  
5 which, when applied to the body, can produce an artificial skin thereon.

Embodiments of the invention as a skin product can be made which are much more uniform, with better spreading properties. They are believed to have a low surface tension for the skin. Embodiments of the invention as a makeup product can be made which act as a suspending agent that gives better spreading. These or other  
10 embodiments can prevent oils from going rancid. If desired, embodiments can be made to produce a film on the skin, provided that they are not too oily, e.g. due to the active ingredients. Embodiments of the invention can be used to make a thick viscous liquid to thicken a cosmetic product.

Other aspects of the invention comprise: a cosmetic composition, characterised  
15 in that it is made by a process comprising a method embodying the invention; a method of treating the human body, characterised in that it comprises use of a cosmetic composition embodying the invention; a human body treated by such a method.

#### MORE PARTICULAR DESCRIPTION OF EXAMPLES

20 In one example, the following ingredients are used: water, buffering/sequestering agent, preservatives, gellan gum, structuring agent, carrageenan, active ingredients, neutraliser, solubiliser, absorption enhancer. The buffering/sequestering agent is used to soften the water and remove calcium ions. After considerable experiment, the inventor discovered that suitable ranges of proportions of the gellan gum and

carrageenan would produce a gel suitable for use as a base for cosmetic products. The ratios or levels of the ingredients will depend upon one's choice of other ingredients. Some ingredients might interfere with the gelling (i.e. gel formation), and in such cases one will therefore need more gelling agent, e.g. the gellan gum and/or  
5 carrageenan. Use of a structuring agent gives the gel a structure which is stable and can hold a large amount of water (and active ingredients dissolved in the water). The gel can be made clear; e.g. the gellan gum as a powder can be added slowly to the water with sequestering/buffering agent and preservatives, and stirred slowly until clear. This is aesthetically pleasing in appearance, which has psychological benefits  
10 that produce a psychosomatic beneficial effect on the skin or hair.

The gel has a pleasing appearance likewise when oil bubbles are suspended in the (neutral) gel, e.g. small bubbles (0.25 to 3 mm diameter, preferably 0.5 to 1 or 1.5 mm) of oil-based substance are carried in the water, e.g. vegetable oils, e.g. sweet almond, sunflower, olive, sesame or avocado oil. In such case, the appearance is of  
15 small air bubbles in a clear gel, and the product is aesthetically pleasing, attractive and less messy than other methods of applying oil; with bubbles of this size, there is no need for an emulsifier to stabilise the product.

As an alternative, the product can be made into a lotion or cream using the gellan gum and carrageenan as a suspender to form a stable emulsion, though this will  
20 normally be white (or can be made coloured); the product will still have the advantages mentioned above of the well-tested and natural ingredients. The oil phase level determines whether the product is an oil or a wax.

Another use of the gel in cosmetics is to form an artificial skin (as is known in food technology); e.g. so that the product is in or under this artificial skin, or an

ingredient thereof, has time to be absorbed by or through the natural skin (of the human being) while minimising disturbance to the substance or to the person; or e.g. to make it longer-lasting, as is advantageous, for example, with a product which is primarily a colorant (e.g. rouge, blusher, skin toner).

5 In bulk trials, the ingredients shown in the following table were used to make 100 kilograms of an arnica balm. The second column shows the weight percentage (as also the number of kilograms) in a particular trial, the third column shows the range of percentages in this and other successful trials, and the fourth column indicates the function of each ingredient.

TABLE

10

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20

25

INGREDIENT	% w/w	RANGE	FUNCTION
Water	80.575	top up	vehicle
Trisodium citrate	0.130	0.1-0.5	buffering/sequestering agent
Sodium benzoate	0.100	up to 0.1	preservative
Potassium sorbate	0.100	up to 0.1	preservative
Gellan gum	0.130	0.1-0.5	main ingredient for gel
Sorbitol	7.000	5-15	structuring agent
Carrageenan	0.400	0.2-1.0	main ingredient for gel
Arnica	3.000	*	active ingredient
Citric acid	0.100	0-0.2	neutraliser or pH adjuster
Ginger extract	0.300	*	active ingredient
Peppermint oil	0.015	*	active ingredient
Polysorb.20	0.150	5-10 times the level of oils	solubiliser for oils
Alcohol	8.000	0-10	preservative & absorption enhancement agent
* = 0.1-15 in total (active ingredients)			



In the column 2 trial: (1) The water was heated to 45-50 degrees Centigrade. In this, there was then dissolved the trisodium citrate. Then there were added the sodium benzoate and potassium sorbate. (2) The gellan gum in powder form was then added slowly with stirring until the product became clear, the time to do so being  
5 recorded for use in production. (3) The carrageenan was then dispersed in one kilogramme of the sorbitol, and this together with the remainder of the sorbitol was then added to the bulk (i.e. the product of the last stage so far) (which produced the aforementioned "base") and then the arnica was added to the bulk. (4) The citric acid was dissolved in a small amount of hot water and added to the bulk. (5) The ginger  
10 extract and peppermint oil were dissolved in the Polysorb.20 and added to the bulk, the container which had held the ginger extract and peppermint oil being rinsed out with some of the alcohol then also added to the bulk (because the quantity of these used was relatively so small that a significant proportion had remained in such container. (6) The remainder of the alcohol was then added to the bulk and the mix  
15 stirred for two minutes.

The trisodium citrate serves to remove calcium ions in order to hydrate the gellan and obtain a clear gel. The sorbitol can be used to produce the right gel structure for cosmetic purposes; essentially this is less brittle, as is known in the cosmetics art. Instead, more generally, there can be used any one or more chosen  
20 from the group comprising sorbitol, glycerin and glycolic compounds, as known in gel chemistry sequestrant techniques. The whole process is carried out warm, i.e. above about 45 degrees Centigrade, which gives a bubble-free product and ease of filling (containers, e.g. bottles, with the product), though the filling can be carried out at any temperature between 45 degree Centigrade and 25 degrees Centigrade, preferably in

the range 30 to 35 degrees Centigrade. Slight irreversible changes occur if an unused balance of the product is allowed to cool down to room temperature (15 to 20 degrees Centigrade), so that it sets (after two hours), and then is warmed up again for filling at a later time; after such filling, (or alternatively without being warmed up again, i.e. 5 cold filling,) the product is not as cosmetically elegant as before, though it is still usable. The citric acid is used as a neutraliser, e.g. to provide a pH value of 5, the same as the skin. The Polysorb.20 is a solubiliser (solvent) for the oils in the active ingredients and avoids the product going cloudy because of them. The alcohol partly has a dissolving and preservative action on the oils, and partly serves to increase the 10 rate of absorption of product via the (human) skin.

It will be apparent to one skilled in the art, that features of the different embodiments disclosed herein may be omitted, selected, combined or exchanged and the invention is considered to extend to any new and inventive combination thus formed.

CLAIMS

1. A method of manufacturing a cosmetic composition, characterised in that it comprises use of gellan gum and carrageenan.
2. A method as claimed in claim 1, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.
3. A method as claimed in claim 2, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.
4. A method as claimed in claim 3, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:3.
5. A method as claimed in any one of claims 1 to 4, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.
6. A method as claimed in any one of claims 1 to 5, characterised in that the carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.
7. A method as claimed in any one of claims 1 to 6, characterised in that it comprises use of a structuring agent to reduce or eliminate brittleness.
8. A method as claimed in any one of claims 1 to 6, characterised in that it comprises use of a structuring agent to produce a gel structure suitable for cosmetic purposes.
9. A method as claimed in claim 7 or 8, characterised in that said structuring agent comprises one or more substances chosen from the group comprising polyhydric alcohols and glycerin.

10. A method as claimed in claim 7 or 8, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

11. A method as claimed in any one of claims 1 to 10, characterised in that  
5 it comprises use of a sequestering agent.

12. A method as claimed in any one of claims 1 to 11, characterised in that it comprises use of means to produce a pH value within a predetermined range.

13. A method as claimed in claim 12, characterised in that said pH value range is from 3.5 to 7.5.

10 14. A method as claimed in claim 12, characterised in that it comprises use of a neutralising means.

15. A method as claimed in any one of claims 1 to 14, characterised in that the product is maintained at a temperature above 40 degrees Centigrade prior to a filling stage.

15 16. A method as claimed in claim 15, characterised in that filling with the product is carried out within a temperature range of from 25 degrees Centigrade to 45 degrees Centigrade.

17. A method as claimed in any one of claims 1 to 16, characterised in that it is used to produce a cosmetic composition which is not a gel but can be used to  
20 produce a cosmetic composition which is a gel.

18. A method as claimed in any one of claims 1 to 17, characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic composition which is a gel.

19. A method as claimed in any one of claims 1 to 18, characterised in that it is used to produce a cosmetic composition which is a gel.

20. A method as claimed in claim 19, characterised in that it is used to produce a clear gel.

5        21. A method as claimed in claim 19, characterised in that it is used to produce a clear gel containing suspended bubbles of oil.

22. A method as claimed in claim 19, characterised in that it is used to produce an emulsion.

10       23. A method as claimed in any one of claims 19 to 22, characterised in that it is used to produce a cosmetic composition which, when applied to the body, can produce an artificial skin thereon.

24. A method of producing a cosmetic composition, substantially according to any example hereinbefore described.

15       25. A cosmetic composition, characterised in that it is made by a process comprising a method as claimed in any one of claims 1 to 19.

26. A cosmetic composition, characterised in that it comprises gellan gum and carrageenan.

27. A cosmetic composition as claimed in claim 26, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.

20       28. A cosmetic composition as claimed in claim 27, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.

29. A cosmetic composition as claimed in claim 28, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:3.

30. A cosmetic composition as claimed in any one of claims 26 to 29, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.

5 31. A cosmetic composition as claimed in any one of claims 26 to 30, characterised in that the carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.

32. A cosmetic composition as claimed in any one of claims 26 to 31, characterised in that it comprises use of a structuring agent to reduce or eliminate brittleness.

10 33. A cosmetic composition as claimed in any one of claims 26 to 31, characterised in that it comprises use of a structuring agent to produce a gel structure suitable for cosmetic purposes.

34. A cosmetic composition as claimed in claim 32 or 33, characterised in that said structuring agent comprises one or more substances chosen from the group  
15 comprising polyhydric alcohols and glycerin.

35. A cosmetic composition as claimed in claim 32 or 33, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

20 36. A cosmetic composition as claimed in any one of claims 26 to 35, characterised in that it comprises use of a sequestering agent.

37. A cosmetic composition as claimed in any one of claims 26 to 36, characterised in that it comprises use of means to produce a pH value within a predetermined range.

38. A cosmetic composition as claimed in claim 37, characterised in that said pH value range is from 3.5 to 7.5.

39. A cosmetic composition as claimed in claim 37, characterised in that it comprises use of a neutralising means.

5           40. A cosmetic composition as claimed in any one of claims 26 to 39, characterised in that the product is maintained at a temperature above 40 degrees Centigrade prior to a filling stage.

          41. A cosmetic composition as claimed in claim 40, characterised in that filling with the product is carried out within a temperature range of from 25 degrees  
10 Centigrade to 45 degrees Centigrade.

          42. A cosmetic composition as claimed in any one of claims 26 to 41, characterised in that it is used to produce a cosmetic composition which is not a gel but can be used to produce a cosmetic composition which is a gel.

          43. A cosmetic composition as claimed in any one of claims 26 to 42,  
15 characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic composition which is a gel.

          44. A cosmetic composition, substantially according to any example hereinbefore described.

20           45. A method of treating the human body, characterised in that it comprises use of a cosmetic composition as claimed in any one of claims 25 to 44.

          46. A human body treated by a method as claimed in claim 45.

**Amendments to the claims have been filed as follows****CLAIMS**

1. A method of manufacturing a cosmetic composition, characterised in that it comprises use of gellan gum and carrageenan.
- 5        2. A method as claimed in claim 1, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.
3. A method as claimed in claim 2, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.
4. A method as claimed in claim 3, characterised in that the w/w ratio of gellan  
10 gum to carrageenan is substantially in the range of 1:2 up to 1:3.
5. A method as claimed in any one of claims 1 to 4, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.
6. A method as claimed in any one of claims 1 to 5, characterised in that the  
15 carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.
7. A method as claimed in any one of claims 1 to 6, characterised in that it comprises use of a structuring agent to reduce or eliminate brittleness.
8. A method as claimed in any one of claims 1 to 6, characterised in that it  
20 comprises use of a structuring agent to produce a gel structure suitable for cosmetic purposes.
9. A method as claimed in claim 7 or 8, characterised in that said structuring agent comprises one or more substances chosen from the group comprising polyhydric alcohols and glycerin.



10. A method as claimed in claim 7 or 8, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

11. A method as claimed in any one of claims 1 to 10, characterised in that it  
5 comprises use of a sequestering agent.

12. A method as claimed in any one of claims 1 to 11, characterised in that it comprises use of means to produce a pH value within a predetermined range.

13. A method as claimed in claim 12, characterised in that said pH value range is from 3.5 to 7.5.

10 14. A method as claimed in claim 12, characterised in that it comprises use of a neutralising means.

15. A method as claimed in any one of claims 1 to 14, characterised in that the product is maintained at a temperature above 40 degrees Centigrade prior to a filling stage.

15 16. A method as claimed in claim 15, characterised in that filling with the product is carried out within a temperature range of from 25 degrees Centigrade to 45 degrees Centigrade.

17. A method as claimed in any one of claims 1 to 16, characterised in that it is used to produce a cosmetic composition which is not a gel but can be used to produce  
20 a cosmetic composition which is a gel.

18. A method as claimed in any one of claims 1 to 17, characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic composition which is a gel.

19. A method as claimed in any one of claims 1 to 18, characterised in that it is used to produce a cosmetic composition which is a gel.

20. A method as claimed in claim 19, characterised in that it is used to produce a clear gel.

5        21. A method as claimed in claim 19, characterised in that it is used to produce a clear gel containing suspended bubbles of oil.

22. A method as claimed in claim 19, characterised in that it is used to produce an emulsion.

10       23. A method as claimed in any one of claims 19 to 22, characterised in that it is used to produce a cosmetic composition which, when applied to the body, can produce an artificial skin thereon.

24. A method of producing a cosmetic composition, substantially according to any example hereinbefore described.

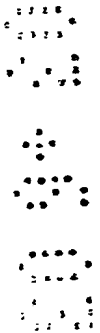
15       25. A cosmetic composition, characterised in that it is made by a process comprising a method as claimed in any one of claims 1 to 19.

26. A cosmetic composition, characterised in that it comprises gellan gum and carrageenan.

27. A cosmetic composition as claimed in claim 26, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.

20       28. A cosmetic composition as claimed in claim 27, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.

29. A cosmetic composition as claimed in claim 28, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:3.



30. A cosmetic composition as claimed in any one of claims 26 to 29, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.

5 31. A cosmetic composition as claimed in any one of claims 26 to 30, characterised in that the carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.

32. A cosmetic composition as claimed in any one of claims 26 to 31, characterised in that it has been made using a structuring agent to reduce or eliminate brittleness.

10 33. A cosmetic composition as claimed in any one of claims 26 to 31, characterised in that it has been made using a structuring agent to produce a gel structure suitable for cosmetic purposes.

34. A cosmetic composition as claimed in claim 32 or 33, characterised in that said structuring agent comprises one or more substances chosen from the group  
15 comprising polyhydric alcohols and glycerin.

35. A cosmetic composition as claimed in claim 32 or 33, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

20 36. A cosmetic composition as claimed in any one of claims 26 to 35, characterised in that it has been made using a sequestering agent.

37. A cosmetic composition as claimed in any one of claims 26 to 36, characterised in that it has been made using means to produce a pH value within a predetermined range.

38. A cosmetic composition as claimed in claim 37, characterised in that said pH value range is from 3.5 to 7.5.

39. A cosmetic composition as claimed in claim 37, characterised in that it has been made using a neutralising means.

5      40. A cosmetic composition as claimed in any one of claims 26 to 39, characterised in that the product is maintained at a temperature above 40 degrees Centigrade prior to a filling stage.

41. A cosmetic composition as claimed in claim 40, characterised in that filling with the product is carried out within a temperature range of from 25 degrees  
10 Centigrade to 45 degrees Centigrade.

42. A cosmetic composition as claimed in any one of claims 26 to 41, characterised in that it is used to produce a cosmetic composition which is not a gel but can be used to produce a cosmetic composition which is a gel.

43. A cosmetic composition as claimed in any one of claims 26 to 42,  
15 characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic composition which is a gel.

44. A cosmetic composition, substantially according to any example hereinbefore described.

20      45. A method of treating the human body, characterised in that it comprises use of a cosmetic composition as claimed in any one of claims 25 to 44.

46. A human body treated by a method as claimed in claim 45.

47. A method of manufacturing a cosmetic composition in the form of a fluid gel, characterised in that it comprises use of gellan gum and carrageenan.

48. A method as claimed in claim 47, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.

49. A method as claimed in claim 48, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.

5 50. A method as claimed in claim 49, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:3.

51. A method as claimed in any one of claims 47 to 50, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.

10 52. A method as claimed in any one of claims 47 to 51, characterised in that the carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.

53. A method as claimed in any one of claims 47 to 52, characterised in that it comprises use of a structuring agent to reduce or eliminate brittleness.

15 54. A method as claimed in any one of claims 47 to 52, characterised in that it comprises use of a structuring agent to produce a gel structure suitable for cosmetic purposes.

20 55. A method as claimed in claim 53 or 54, characterised in that said structuring agent comprises one or more substances chosen from the group comprising polyhydric alcohols and glycerin.

56. A method as claimed in claim 53 or 54, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

57. A method as claimed in any one of claims 47 to 56, characterised in that it comprises use of a sequestering agent.

58. A method as claimed in any one of claims 53 to 56, characterised in that it comprises use of a sequestering agent.

5 59. A method as claimed in any one of claims 47 to 57, characterised in that it comprises use of means to produce a pH value within a predetermined range.

60. A method as claimed in claim 58 or 59, characterised in that said pH value range is from 3.5 to 7.5.

10 61. A method as claimed in claim 58 or 59, characterised in that it comprises use of a neutralising means.

62. A method as claimed in any one of claims 47 to 61, characterised in that the product is maintained at a temperature above 40 degrees Centigrade prior to a filling stage.

15 63. A method as claimed in claim 62, characterised in that filling with the product is carried out within a temperature range of from 25 degrees Centigrade to 45 degrees Centigrade.

64. A method as claimed in any one of claims 47 to 63, characterised in that it is used to produce a cosmetic composition which is not a fluid gel but can be used to produce a cosmetic composition which is a fluid gel.

20 65. A method as claimed in any one of claims 47 to 64, characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic composition which is a fluid gel.

66. A method as claimed in any one of claims 47 to 65, characterised in that it is used to produce a cosmetic composition which is a fluid gel.

67. A method as claimed in claim 66, characterised in that it is used to produce a clear fluid gel.

5        68. A method as claimed in claim 66, characterised in that it is used to produce a clear fluid gel containing suspended bubbles of oil.

69. A method as claimed in claim 66, characterised in that it is used to produce an emulsion.

10       70. A method as claimed in any one of claims 66 to 69, characterised in that it is used to produce a cosmetic composition which, when applied to the body, can produce an artificial skin thereon.

71. A method of producing a cosmetic composition, substantially according to any example hereinbefore described.

15       72. A cosmetic composition, characterised in that it is made by a process comprising a method as claimed in any one of claims 47 to 71.

73. A cosmetic composition in the form of a fluid gel, characterised in that it comprises gellan gum and carrageenan.

74. A cosmetic composition as claimed in claim 73, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:1 up to 1:8.

20       75. A cosmetic composition as claimed in claim 74, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:6.

76. A cosmetic composition as claimed in claim 75, characterised in that the w/w ratio of gellan gum to carrageenan is substantially in the range of 1:2 up to 1:3.



77. A cosmetic composition as claimed in any one of claims 73 to 76, characterised in that the gellan gum is used in the proportion of from 0.1 to 0.5 weight per cent of the final product.

78. A cosmetic composition as claimed in any one of claims 73 to 77,  
5 characterised in that the carrageenan is used in the proportion of from 0.2 to 1.0 weight per cent of the final product.

79. A cosmetic composition as claimed in any one of claims 73 to 78, characterised in that it has been made using a structuring agent to reduce or eliminate brittleness.

10 80. A cosmetic composition as claimed in any one of claims 73 to 79, characterised in that it has been made using a structuring agent to produce a fluid gel structure suitable for cosmetic purposes.

81. A cosmetic composition as claimed in claim 79 or 80, characterised in that said structuring agent comprises one or more substances chosen from the group  
15 comprising polyhydric alcohols and glycerin.

82. A cosmetic composition as claimed in claim 79 or 80, characterised in that said structuring agent comprises one or more substances chosen from the group comprising sorbitol, glycerin and glycolic compounds.

83. A cosmetic composition as claimed in any one of claims 73 to 82,  
20 characterised in that it has been made using a sequestering agent.

84. A cosmetic composition as claimed in any one of claims 79 to 82, characterised in that it has been made using a sequestering agent.



85. A cosmetic composition as claimed in any one of claims 73 to 84, characterised in that it has been made using means to produce a pH value within a predetermined range.

86. A cosmetic composition as claimed in claim 85, characterised in that said pH  
5 value range is from 3.5 to 7.5.

87. A cosmetic composition as claimed in claim 85, characterised in that it has been made using a neutralising means.

88. A cosmetic composition as claimed in any one of claims 73 to 87, characterised in that the product is maintained at a temperature above 40 degrees  
10 Centigrade prior to a filling stage.

89. A cosmetic composition as claimed in claim 88, characterised in that filling with the product is carried out within a temperature range of from 25 degrees Centigrade to 45 degrees Centigrade.

90. A cosmetic composition as claimed in any one of claims 73 to 89,  
15 characterised in that it is used to produce a cosmetic composition which is not a fluid gel but can be used to produce a cosmetic composition which is a fluid gel.

91. A cosmetic composition as claimed in any one of claims 73 to 90, characterised in that it is used to produce a cosmetic composition which is a base to which can be added active ingredients and can be used to produce a cosmetic  
20 composition which is a fluid gel.

92. A cosmetic composition, substantially according to any example hereinbefore described.

93. A method of treating the human body, characterised in that it comprises use of a cosmetic composition as claimed in any one of claims 72 to 92.

94. A human body treated by a method as claimed in claim 93.





Application No: GB 0200204.6  
Claims searched: 1-46

Examiner: Dr William Thomson  
Date of search: 18 February 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X, &	1-46	WO 01/02479A1 (THE PROCTOR & GAMBLE COMPANY) See whole document, in particular page 1, lines 7-15, page 7, lines 16-20, page 9, lines 6-10, Example 3 and claims 1-16
X, &	1-46	WO 01/02478A1 (THE PROCTOR & GAMBLE COMPANY) See whole document, in particular page 1, lines 1-8, page 7, lines 16-20, page 9, lines 6-10, Example 3 and claims 1-17
X	1-46	WPI Abstract Accession No 2001-565069/63 & JP 2001240520 (LION CORP) 04/09/01 See abstract
X	1-46	WPI Abstract Accession No 2001-491935/54 & JP 2001158713 (SHISEIDO CO LTD) 12/06/01 See abstract
X	1-46	WPI Abstract Accession No 2000-359599/31 & JP 2000119166 (NARISU KESHOHIN KK) 25/04/00 See abstract
X	1-46	WPI Abstract Accession No 1999-029026/03 & JP 10291928 (FUJI CAPSULE KK) 04/11/98 See abstract
X	1-46	WPI Abstract Accession No 1989-089881/25 & JP 1040415 (SAN-EI CHEM IND LTD) 10/02/89 See abstract

### Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.



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**Application No:** GB 0200204.6  
**Claims searched:** 1-46

**Examiner:** Dr William Thomson  
**Date of search:** 18 February 2003

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>v</sup>:

A5B

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

A61K

The following online and other databases have been used in the preparation of this search report:

CAS-ONLINE, EPODOC, JAPIO, TXTE & WPI